

# Needs Assessment of Minnesota Fruit and Vegetable Producers

**Annie Klodd and Natalie Hoidal**

**November 20, 2019**

This report summarizes the findings of a needs assessment with commercial fruit and vegetable growers in Minnesota completed over the winter of 2018-2019, as well as a follow-up retreat with individuals representing organizations working with fruit and vegetable research, outreach, and education in the Midwest. Based on the needs assessment and retreat, we have identified priority areas for fruit and vegetable research and education with Minnesota farmers.

## **SECTION 1: FRUIT AND VEGETABLE NEEDS ASSESSMENT RESULTS**

### **Summary**

Section 1 summarizes the results of a needs assessment of Minnesota produce farmers conducted over the winter of 2018-2019. The goals of the survey were to increase understanding of farmers' educational needs regarding specialty crop production, how farmers prefer to get information, and demographic trends. The needs assessment results are meant to inform UMN Extension program priorities, assist non-profit farming organizations with program development, and to inform research and grant funding. 315 growers responded to the survey. Based on the 2017 agriculture census, we estimate that the survey reached approximately 10% of Minnesota produce growers (USDA National Agricultural Statistics Service). The survey captured valuable information about educational and research priorities as well as preferences for information transfer.

### **Background**

This assessment was first proposed in January 2018 with the goal of developing a baseline understanding of the current educational needs of fruit and vegetable growers. The primary purpose was to help the University of Minnesota Extension horticulture team develop programming that meets grower priorities.

The project was funded by a SARE mini-grant (PI Annie Klodd) in October 2018, and the intent of the project broadened to sharing the results with organizations and educators beyond University of Minnesota. This allowed the project to assist partner organizations in

developing programming and to encourage collaborations that combine organizations' skill areas to better meet farmer needs.

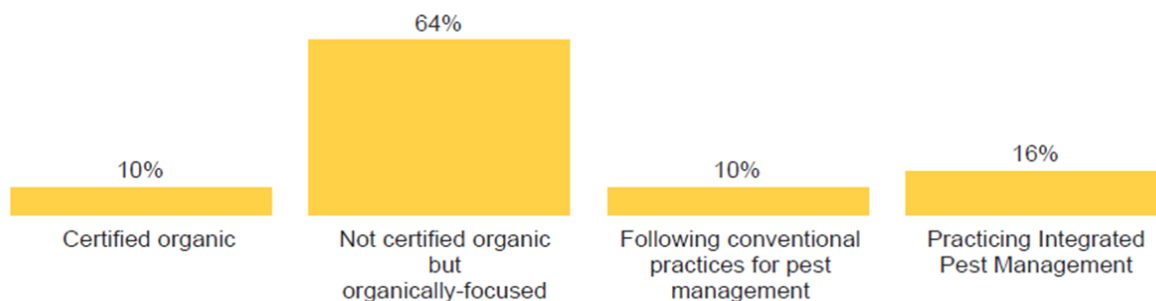
The University of Minnesota Extension commercial horticulture team, consisting of Extension Educators Annie Klodd, Natalie Hoidal, Anne Sawyer, and Annalisa Hultberg, focuses primarily on production issues. Because of the scope of the horticulture team's positions and expertise areas, the needs assessment included mostly production-related questions. Other issues such as marketing, market access, land access, and farm transition are beyond the primary scope of work of the UMN Fruit and Vegetable educator team. However, the needs assessment discussion at the retreat (discussed in Section 2) welcomed points about all issues including those not examined in the survey. Many of the comments from the discussion are reflected in Section 2 of this report.

## Demographics

315 participants completed the survey. The survey was distributed online over numerous email listservs including Sustag, Sustainable Farming Association, Minnesota Farmers Market Association, Minnesota Food Association, UMN Extension and Minnesota Grown. Additionally, it was distributed in paper form and on iPads at the Sustainable Farming Association annual meeting (Feb. 2019) and at the MN Fruit and Vegetable Growers Association conference (Jan. 2019). It was also distributed at several Minnesota Food Safety Modernization Act trainings throughout January and February. Shortfalls of the survey distribution were the lack of adequate distribution to immigrant farmers including Hmong and Latino farmers, as well as low participation by the state's large apple grower community.

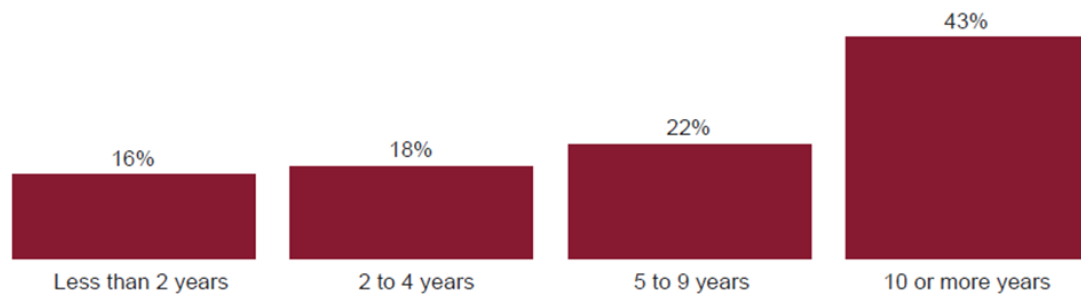
A majority (64%) of survey participants identified as "Not certified organic but organically-focused" This finding supports the need for more organically-focused research, or at least the inclusion of organic treatments in research trials.

Which of the following do you feel best describes your approach to farming?

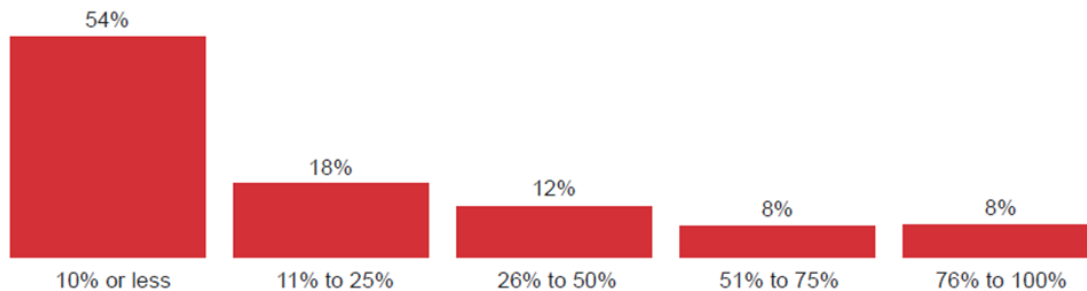


While many participants had been growing for 10+ years, many newer farmers were also represented in the survey, including 49 people who have been farming for 2 years or less. Overall, the majority of survey participants relied on their farm for less than 10% of household income, which surprised many of the attendees at the strategic planning retreat. Participants commented that if the survey had included more immigrant and minority farmers, particularly Hmong farmers, it may have included a greater percentage of farmers who rely on their farms for 50% or more of their household income. One retreat attendee commented that we do not know the reason why so many farms report a low percentage of household income from the farm; this question should be explored further.

#### How long have you been growing produce to sell?

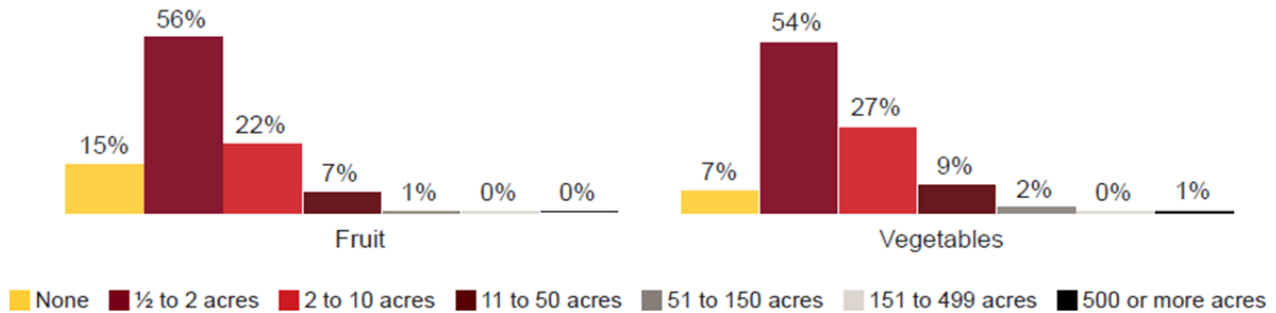


#### What percentage of your household income comes from fruit and vegetable sales?



The majority of survey participants farmed fruits or vegetables on 2 acres or less. Note that the figure below shows acreage for fruit and vegetables separately rather than the cumulative total acreage of farms.

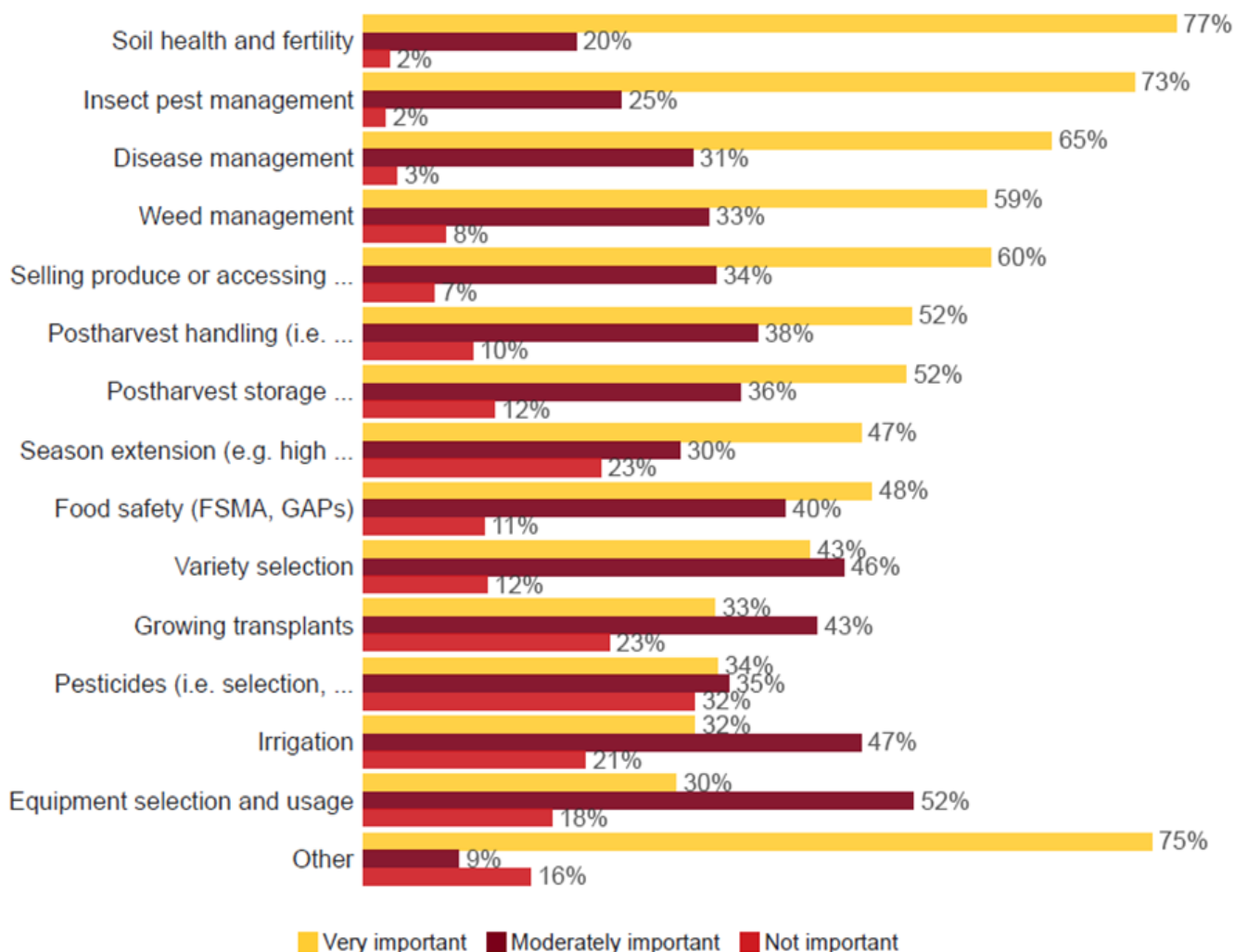
## On how many acres do you currently produce the following?



### Farmer Priorities

Participants ranked the importance of a number of production issues to their success in producing fruits and vegetables. Fourteen issue areas were listed, and participants were also invited to enter other topics in the “Other” category. Overall, the top 5 issues or topic areas expressed by participants were: soil health and fertility, disease management, insect pest management, weed management, and selling produce or accessing markets. While the topic areas were relatively general to minimize survey fatigue, participants were allowed several opportunities throughout the survey to enter more specific input, which many did. These top 5 issue areas remained the top 5 throughout the entire timespan of the survey, and did not vary substantially when the results were filtered to organization membership or experience level (number of years farming). Therefore, the results would suggest that these issue areas are considered very important among Minnesota fruit and vegetable farmers and should be considered in program development, education, and research.

## Importance of issues to your success in producing vegetables and fruit

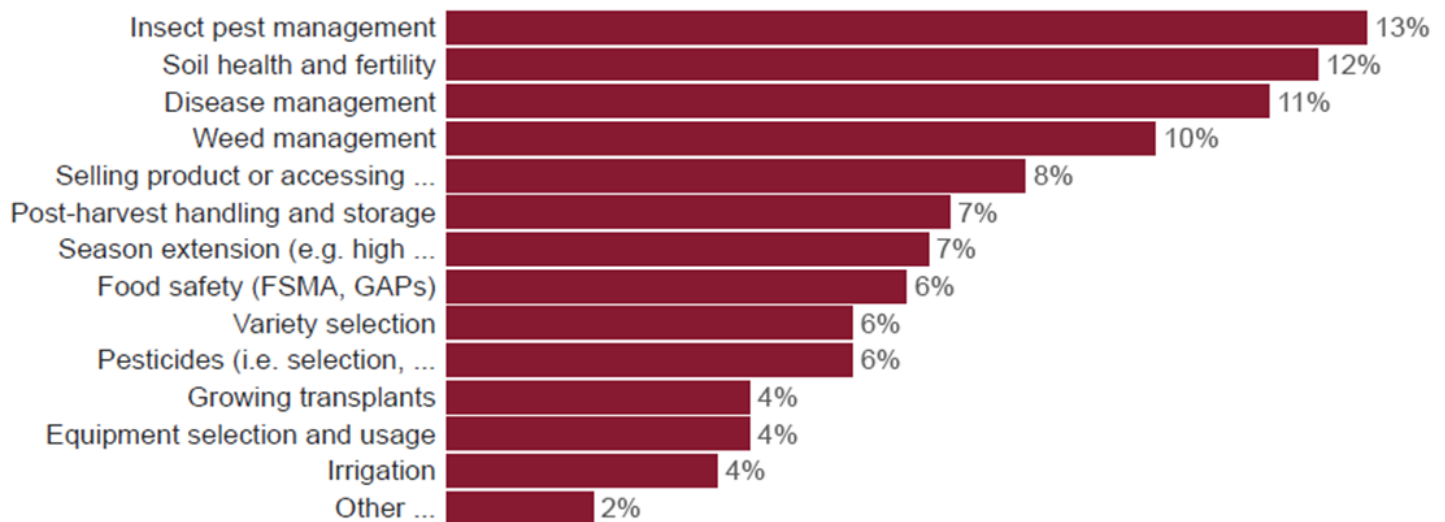


Food safety was ranked in the middle of the list of topics; however demand for, and participation at FSMA and GAPs workshops during 2018 and 2019 has been high. In this case, we believe that the ranking in the survey does not necessarily mean that participants feel food safety is unimportant. One participant commented that while food safety is important to them, they are already getting the information they need in that area thanks to the current Produce Safety program led by Extension educators Annalisa Hultberg and Anne Sawyer, county Extension educators, farmer instructors, and MDA staff.

After ranking topic areas by importance, survey participants were asked, “Out of the topics you rated ‘Very Important’ above, for which topics would you like more research-based information?” The ranking of topics corresponded very closely with the topic rankings presented above, but insect pest management rose to the top, with soil health and fertility ranked second. Furthermore, beginning farmers formed a similar ranking to those with

more experience. The only slight notable difference is that more experienced farmers (10+ years) had slightly more desire for pesticide information than less experienced farmers.

### Topics where you would benefit from more research-based information:



We then asked participants to state their current or future usage of several farming practices: Cover crops, high tunnels, manure or composted manure, and pollinator habitat management. These topics were inquired about because they are of known interest to multiple organizations such as the University of Minnesota Extension, Sustainable Farming Association, Xerces Society, and NRCS. The goal was to understand the extent to which farmers were using or interested in using these practices, because they are scientifically technical topics for which educational programming would be important for farmer success.

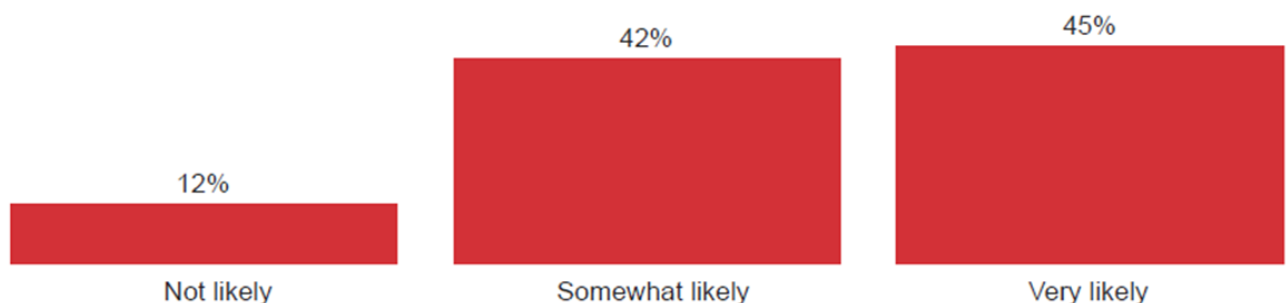
**TABLE 1:** What is your usage of the following practices

PRACTICE	CURRENTLY	CONSIDERING	NOT USING
Cover crops	47%	29.2%	22.8%
High tunnels	36.3%	29.5%	34.2%
Manure or composted manure	58.7%	16.4%	24.9%
Pollinator habitat management	46.3%	33.8%	20%

The authors were surprised by the high percentage of respondents currently using manure. In less formal assessments such as a show-of-hands at field days, very few attendees had ever expressed using manure as a source of compost or soil amendment. This may be due to people not wanting to reveal usage practices in person for fear of having to defend or

describe their practices. During the retreat discussion (addressed in Section 2), many participants were surprised by the high “currently using” rates overall for all four categories; this led to a discussion about potential differences in definitions. For example, a farmer might select “currently using” for pollinator habitat management while still having an interest in adding additional habitat to their farm. The survey contained conflicting results about the importance of variety selection to farmers, depending on how the question was asked. The same basic question was asked in two different ways within the survey. In the rankings of priority topic areas presented above, variety selection it was rated in the lower half of the priority topic areas, with 43% of farmers rating it as “Very Important” and 43% rating it “Somewhat Important.” However, when asked if they would use results from replicated variety trials from the University of Minnesota when selecting varieties for their farm, 87% of participants said they would be “Very Likely” or “Somewhat

**If the University of Minnesota did controlled, repeated vegetable variety trials, would you consider those results when selecting varieties or other growing practices?**

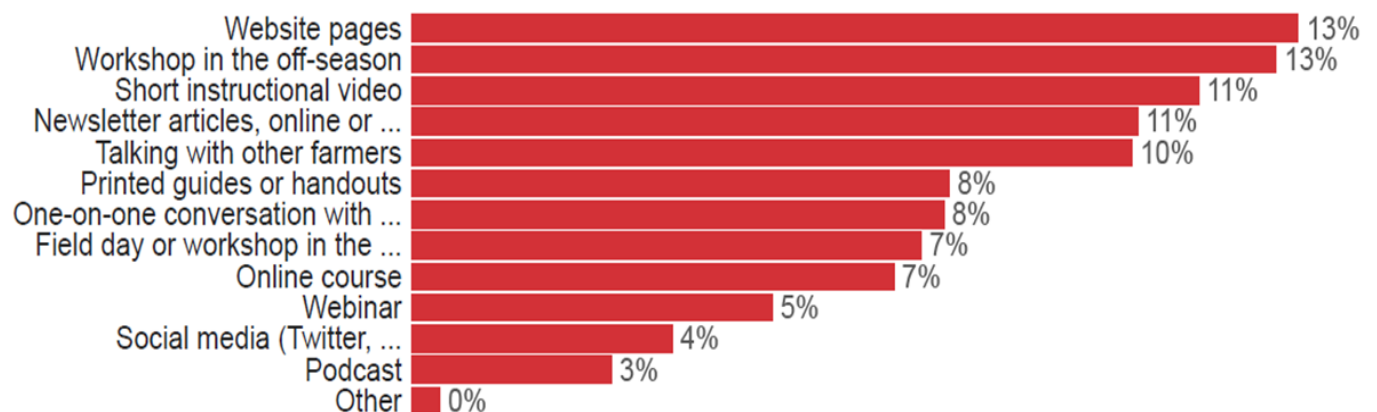


Likely” to use the results. We wish to do further in-person exploration with farmers to better understand if and how they would like to work with the UMN and other partner organizations on variety selection. The Organic Seed Alliance has expressed interest in collaborating with Extension and the University of Minnesota to conduct on-farm variety trials informed by the needs of farmer collaborators.

## **Outreach strategies**

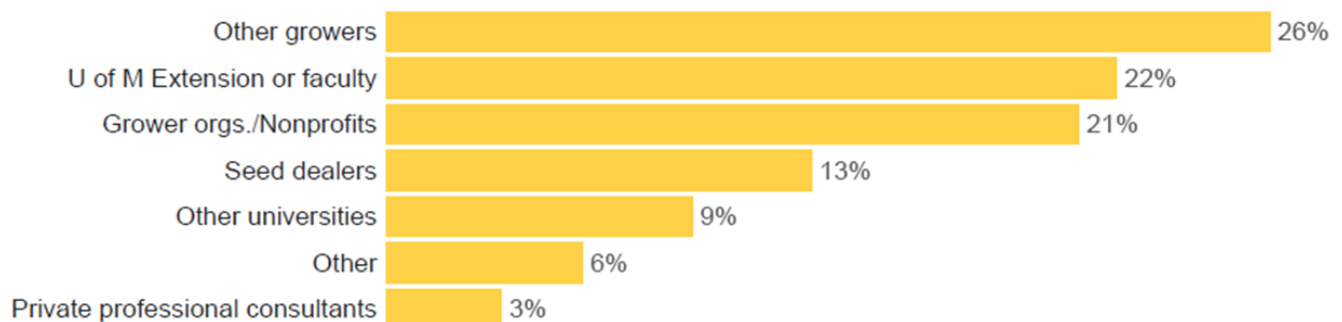
The second part of the needs assessment aimed to understand how farmers prefer to learn, so that Extension and others can more effectively deliver information. In summary, the survey suggested that Minnesota produce farmers prefer concise online resources like videos, website pages, and articles, as well as off-season workshops; In-season field days were ranked low in the order of preference. At the retreat, an open question was posed: How can we increase participation in field days, in order to teach things that should be demonstrated visually? It is not always possible to teach all concepts indoors in the off-season; some things simply need to be demonstrated during the growing season. Ideas from the retreat attendees included filming field days and making the footage available online, offering more webinars, and generally make things available in multiple formats.

### Which educational tools are you most likely to use? (check no more than 5 that apply)



Farmers preferentially utilize information delivered by farmer-to-farmer education, the university, and a variety of farming organizations; these efforts can be combined in a number of ways.

### Where do you currently get your information? (identify only your top three choices)



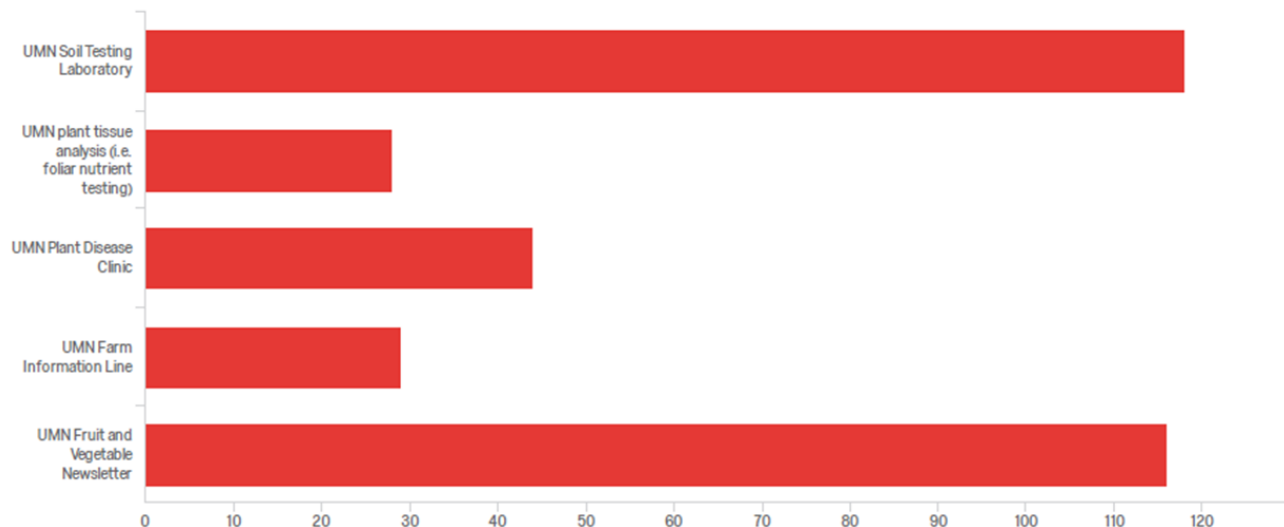
We also asked which University of Minnesota services participants have utilized in order to understand farmers' interest in these services and identify whether UMN should do better to reach out to farmers about the services that exist. Out of those listed, the most highly used were the soil testing services and the Fruit and Vegetable Newsletter. Retreat attendees pointed out that because soil testing is inexpensive and very important, there is



a need to better promote this tool and create resources to help farmers interpret results. Only about 1/3 of participants indicated that they had used the soil testing lab before. The UMN Extension horticulture educator team is interested in doing more to encourage farmers to do soil testing and use the results to improve soil health and fertility.

The Farm Information Line is a valuable resource that very few farmers reported using. This should be better advertised in the future.

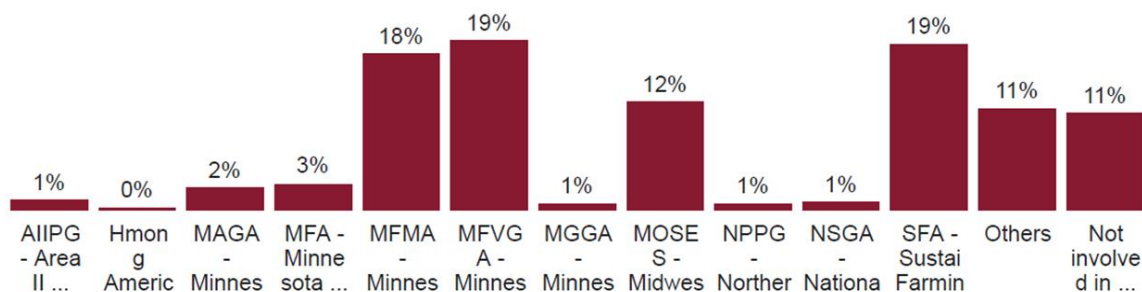
### Which of the following UMN services have you utilized? (Check all that apply)



The plant disease clinic was also not widely used by farmers who filled out the survey, even though farmers rated disease management as a top priority. The obstacles to usage may include the expense of submitting samples, farmers' limited time to take samples and treat problems, and believing that many plant diseases and disorders can be diagnosed visually. Due to the wait time, it may also be too late to treat a disease once it's identified. However, many diseases cannot be visually diagnosed, and even if a diagnosis cannot help with management for the current season, it can help to inform management in future years. The plant disease clinic is likely an underutilized resource, and Extension should explore whether to do more to promote the Plant Disease Clinic for farmer benefit.

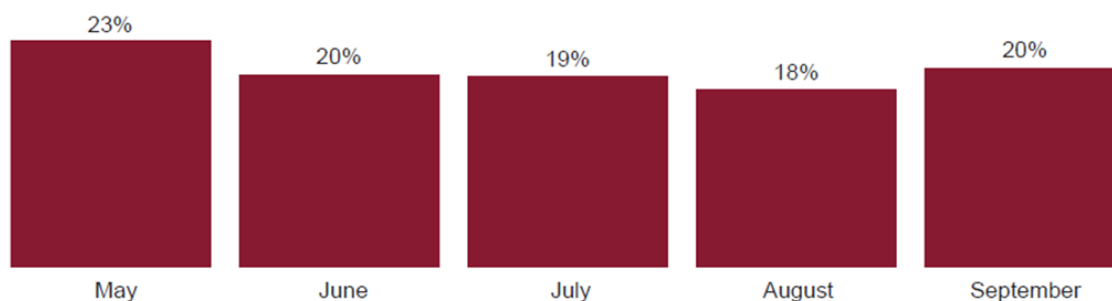
The survey revealed active participation in farming organizations among Minnesota farmers who completed the survey. Many are members of multiple organizations, indicating that there is strong overlap in "audience" among the organizations represented at the retreat. A limitation of the survey is that it was not adequately distributed to immigrant farmers. Furthermore, not many fruit growers completed the survey compared to how many there are in the state. It is likely that the survey does not adequately reflect all of the needs or practices of these grower groups. That said, these results reinforce the fact that many fruit and vegetable growers actively participate in a number of farmer-focused organizations. Many of these groups already collaborate, and there is likely potential for these groups to work more closely together in the future to achieve common goals and reach broader audiences.

Which of the following associations are you involved in? (please identify all that apply)

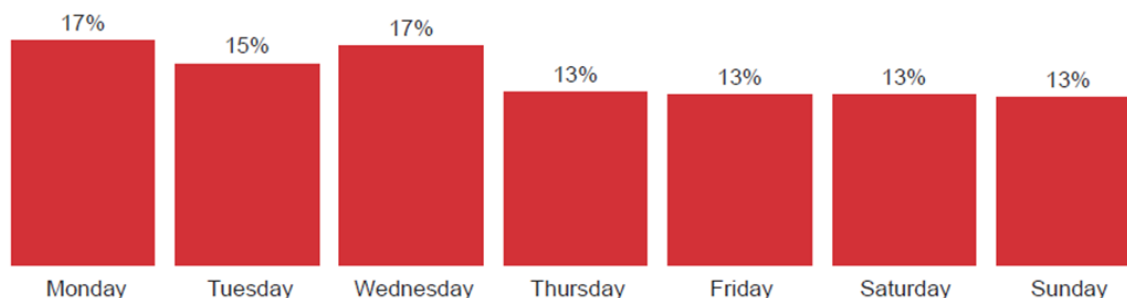


In an effort to better reach farmers for educational events when and how they prefer, the survey included a set of questions about the time during the year, week, and day that farmers would like to attend events. No general pattern was revealed by the survey regarding the preferred month or day of the week during the growing season to do field days. During the off-season, the most popular time of day was “full-day” followed by the morning, then afternoon. However, for the growing season, participants indicated that they prefer half-day field days (either morning or afternoon) or evening rather than full-day events. Another 20% said that they are not interested in attending events during the growing season.

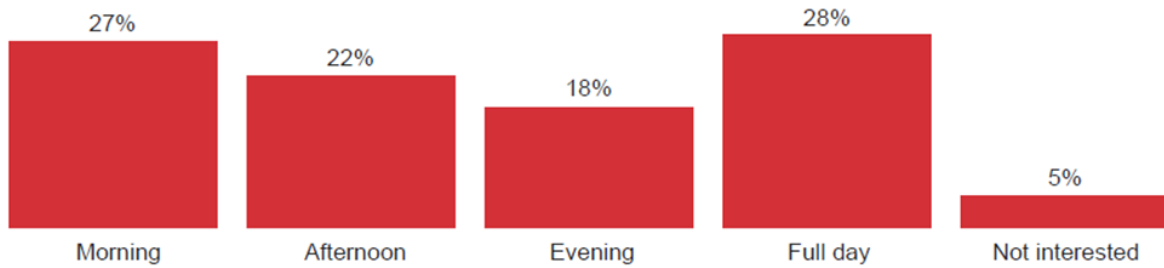
In which months would you be most likely to participate in a field day ?



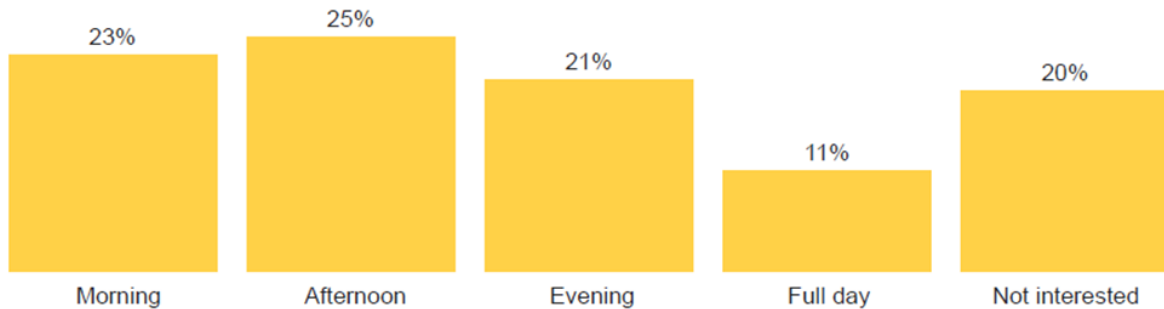
Do you prefer certain days of the week for in-person programs? (Check all that apply)



What is your preferred time frame for educational events in the off-season (November-April)?



What is your preferred time frame for field days or workshops during the growing season?



For more detailed survey data or region-specific reports, please contact Annie Klodd or Natalie Hoidal.

## SECTION 2: SUMMARY OF WORLD CAFÉ: TOPIC-BASED DISCUSSIONS OF CURRENT ACTIVITIES, NEED AREAS, AND FUTURE PROJECT IDEAS

### Summary

Following the completion of the needs assessment, the authors convened a retreat for leaders of organizations around the state that work with fruit and vegetable growers. Since survey data is limited in nature, a retreat allowed the authors to facilitate a deeper discussion of the survey to better understand the responses. For example, while soil health was the top priority identified by survey respondents, soil health is an extremely broad topic. The retreat allowed further analysis of what types of research and education might be most helpful related to the theme of soil health. Participants at the retreat are listed in Appendix 1 of this report. The goals of the retreat included:

- To share the results of the fruit and vegetable needs assessment
- To learn from participants about existing initiatives that are addressing some of the identified needs, and to identify ways for Extension and other organizations to support existing projects

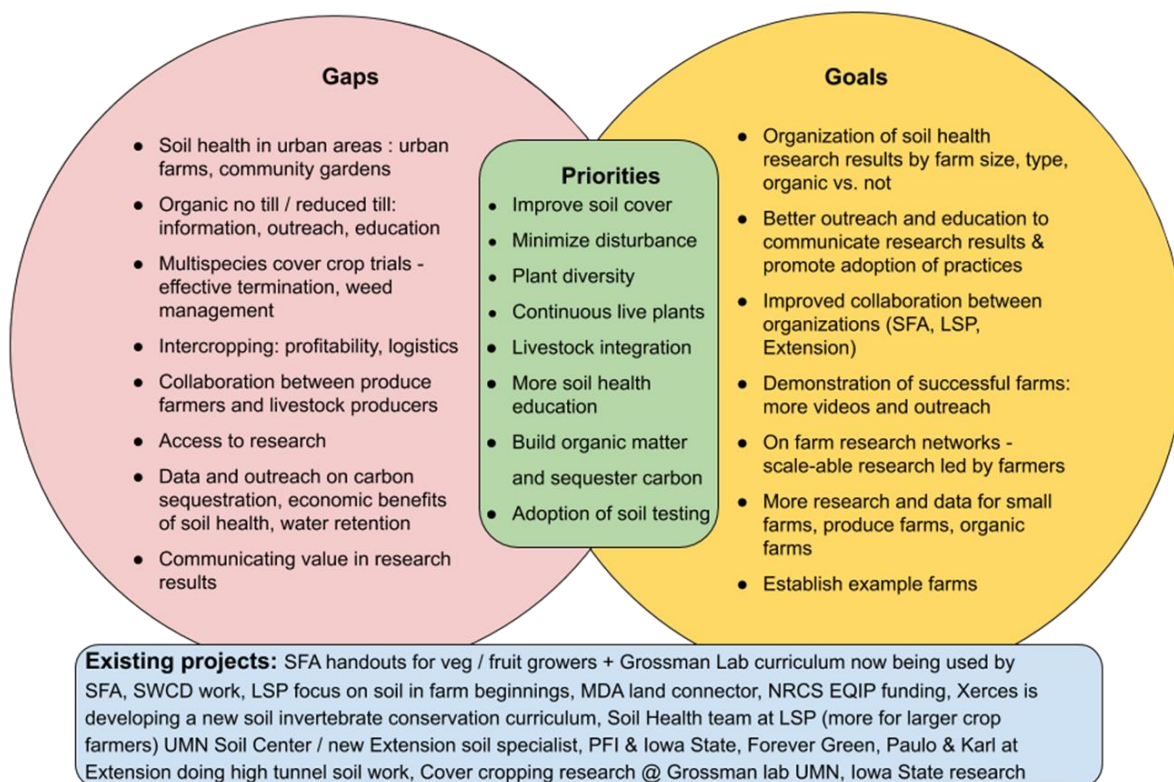
- To identify gaps in identified need areas
- To build a stronger network between organizations doing outreach and education with fruit and vegetable growers
- To explore potential collaborations

The day was divided into three sessions:

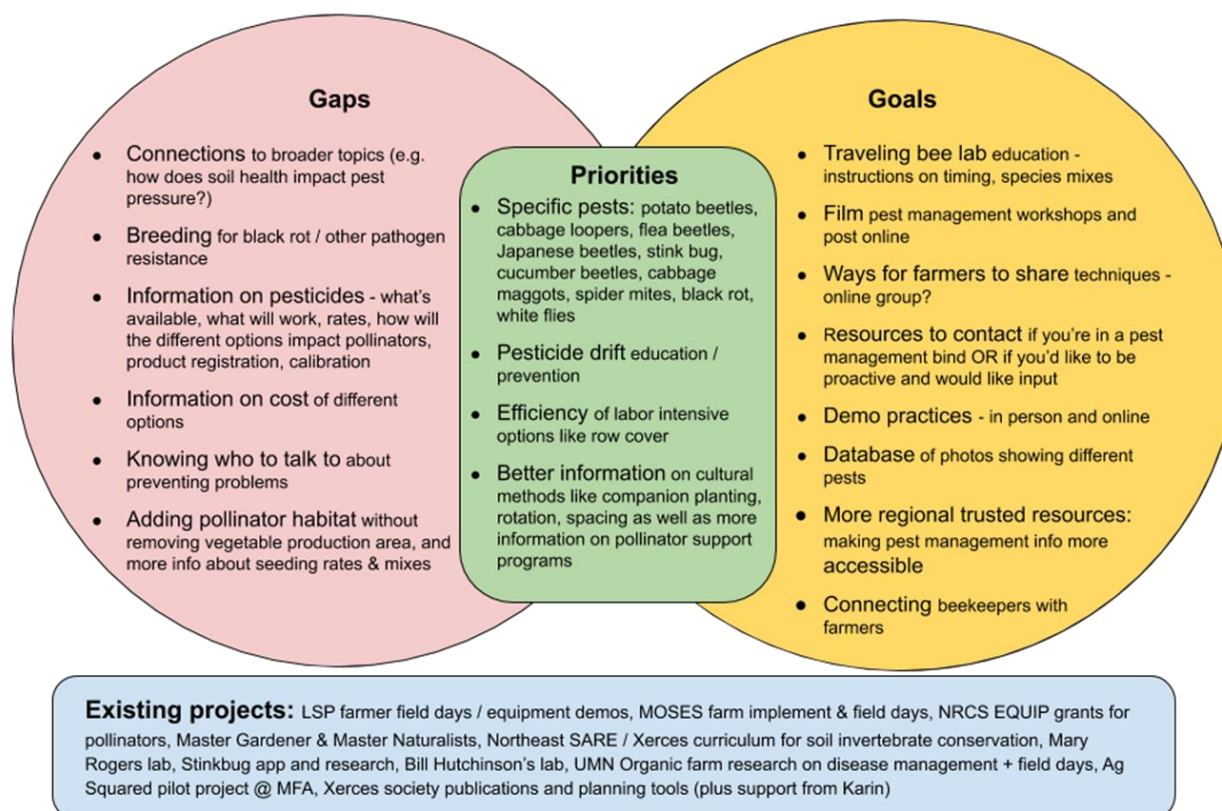
1. A needs assessment overview followed by small group discussions. Notes from the small group discussions were integrated into the discussion of survey results in Section 1.
2. A World Café session where participants were divided into five groups, and each group spent ten minutes at each of five topic tables. The five topics were chosen based on the needs assessment in Section 1, and included Soil Health, Pest Management and Pollinators, Accessing Markets, Food Safety, and Season Extension. Because the need assessment only identified broad categories, we used this world cafe as a “meta-analysis” to identify priorities, gaps, goals, and existing initiatives related to each of the five topics. Facilitators at each table took notes and reported back to the group. Their notes were used to develop the charts listed below.
3. A sharing circle where each participant shared the strengths of their organization, how their organization could benefit from other organizations, and successful outreach strategies that they’ve used. The results of this discussion are shared in Section 3.

The following graphics summarize the discussions around the five priority topic areas identified from the needs assessment.

## Soil Health

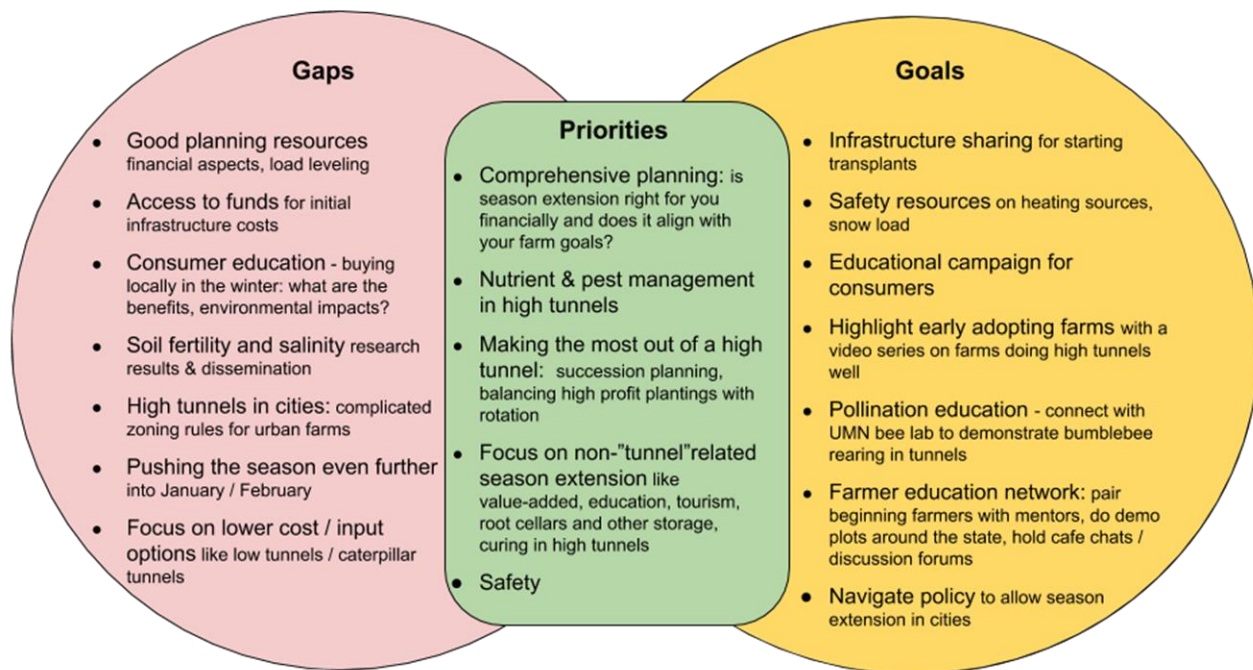


## Pest management and pollinators



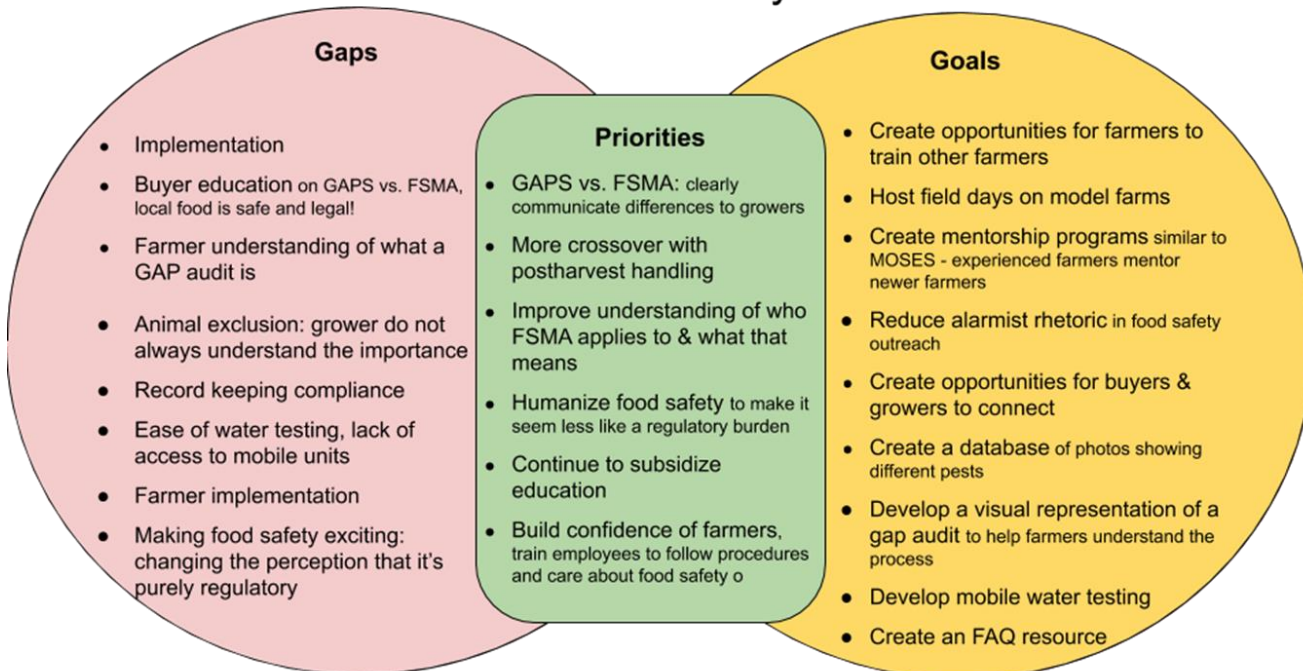


## Season extension



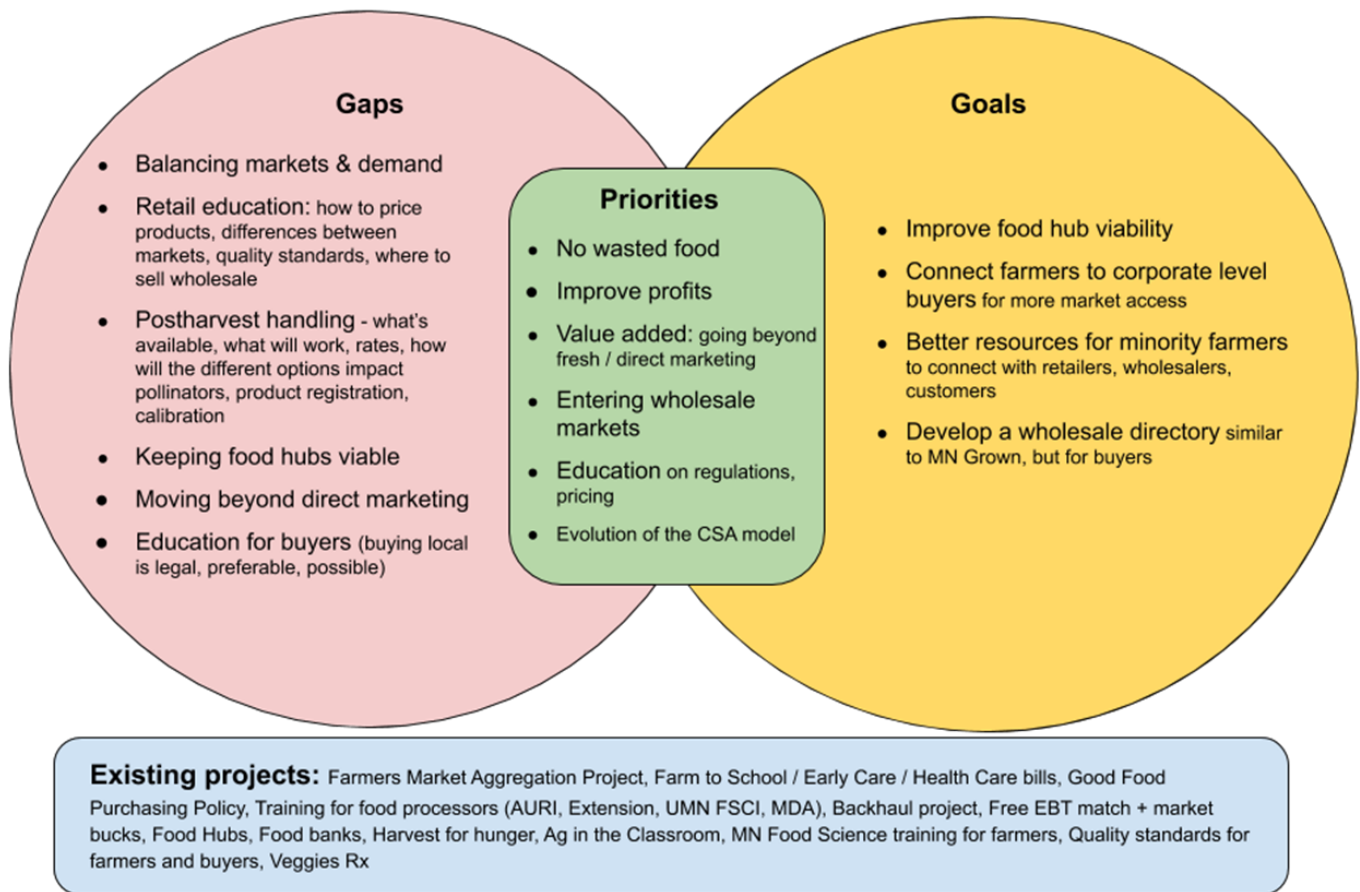
**Existing projects:** Field days (MFA, LSP), NRCS high tunnel projects and funding, Iowa state project: gathering water from roofs, Good Acre high tunnel demos: perennial fruits, trellising, and varieties, RSDP winter greenhouse projects, Cindy Tong's work with post-harvest, Variety trials with seed companies, MOSES field days, Strawberry research with Steve Poppe, Grossman lab studying high tunnels and cover crops, MISA & Cornucopia farms showcasing new varieties in heated greenhouses

## Food Safety



**Existing projects:** FSMA training, GAPS education, GAP audits

# Selling produce and accessing markets



## Based on the five topic areas, a few overall themes emerged:

1. Farmer-led research: In all of these groups, retreat participants expressed the need for farmers to be involved in the research process if the goal is adoption or implementation. By involving farmers in the process from the beginning, researchers can ensure that the methods used and questions asked will be relevant to the intended audience. Farmers involved in research are also excellent communicators of results.
2. Farmer-to-farmer education networks: Farmers are most interested in learning from each other, and learning by example. Creating mentorship programs, videos starring farmers, and cafe chat methods of disseminating information is vital to promoting implementation of new practices.
3. Better connections between farmers and university research: In many of these topic areas, participants expressed that while information is often available, it is not accessible.

4. Holistic approaches: In multiple world cafe groups, participants expressed the need to incorporate environmental, financial, and social sustainability into research and outreach. Data on yields (for example) is not sufficient; such information must be accompanied by a more thorough analysis of feasibility and applicability.

## **APPENDIX 1: ATTENDEES**

**Annie Klodd** - UMN Extension, fruit and vegetable production systems

**Natalie Hoidal** - UMN Extension, fruit and vegetable production systems

**Karin Jokela** - Xerces Society, farm bill pollinator conservation planner

**DaNela Higgins** - Growing Acres, coordinating consultant

**Janssen Hang** - Hmong American Farmers Association, senior organizer, farm manager, co-founder

**Tiffany LaShae** - Frogtown Farm, farm manager

**Annalisa Hultberg** - UMN Extension, food safety

**Jan Joannides** - Renewing the Countryside executive director

**Laura Mirafuentes** - MN Food Association education program director

**Kelly Ganzer** - Rutabaga project, project manager

**Courtney Tchida** - Cornercopia student organic farm & Minnesota Institute for Sustainable Agriculture

**Jessie Barelli** - Sprout food hub in Little falls

**Annalie Livingston-Anderson** - Land Stewardship Project Farm Beginnings and farmer

**Rod Elmstrand** - Minnesota Fruit and Vegetable Growers Association board member and farmer

**Laura Vogel** - MN Landscape Arboretum, adult education director

**Jane Jewett** - Minnesota Institute for Sustainable Agriculture

**Ren Olive** - Regional Sustainable Development Partnerships, local foods

**Anne Sawyer** UMN Extension, food safety

**David Van Eckhout** - The Good Acre, grower support specialist

**Amelia** - National Young Farmers Coalition, farmer and network representative

**Linda Kingery** - Regional Sustainable Development Partnerships, executive director for the Northwest Region

**Karen Lanthier** - Minnesota Grown, Minnesota Department of Agriculture

**People not present but invited:** Kathy Zeman (MN Farmers Market Association), Jerry Ford (Sustainable Farming Association), Rodrigo Cala (Latino Economic Development Council), Jamie Adams (Fond du Lac), Zach Paige (Sustainable Farming Association)

**Note takers:** Vivian Wauters (UMN grad student), Laura Vogel (Arboretum adult education), Carrie Stowers (Arboretum and Red Barn Farm)